OK TO ENTER: /AS/

AMENDMENT TO THE CLAIMS

The following listing of claims will replace all previous listings:

Listing of Claims

1. (Canceled)

2. (Currently Amended) ~~The method of claim 1,~~ A method for detecting an abused sensor adapted for determining a concentration of a medically significant component of a biological fluid, comprising the steps of:

   a) applying a signal having an AC component to the sensor;

   b) measuring an AC response to the signal; and

   c) using the AC response to determine if the sensor is abused, wherein steps (a), (b) and (c) are performed before application of the biological fluid to the sensor.

3. (Currently amended) The method of claim ~~1~~2, wherein the AC response comprises an admittance.

4. (Currently amended) The method of claim ~~1~~2, wherein the signal is an AC signal.

5. (Currently amended) The method of claim ~~1~~2, wherein the AC response comprises phase angle information.

6. (Currently amended) The method of claim ~~1~~2, wherein the AC component of the signal has a frequency not less than 1 Hz and not greater than 20kHz.

7. (Currently amended) The method of claim ~~1~~2, wherein the biological fluid is blood.

8-17. (Canceled)

18. (Currently amended) ~~The method of claim 8,~~ A method for detecting an abused sensor for determining a concentration of a medically significant component of a biological fluid placed upon the sensor, comprising the steps of:

a) placing the biological fluid sample upon the sensor;

b) applying a first signal to the biological fluid;

c) measuring a current response to the first signal;

d) repeating step (c) at least once;

e) calculating a normalized Cottrell Failsafe Ratio using the current response data;

f) applying a second signal having an AC component to the biological fluid;

g) measuring an AC response to the second signal; and

h) combining the normalized Cottrell Failsafe Ratio and the AC response to produce an indication of whether the sensor has been abused, wherein step (h) comprises calculating a FAILSAFE number as follows:

$$FAILSAFE = 1000 \times \arctan[NCFR/(fs_0 + fs_1(\Phi_1 - \Phi_2))]$$

where 1000 = scaling factor

$NCFR$ = normalized Cottrell Failsafe Ratio

fs_0 = constant

fs_1 = constant

Φ_1 = phase angle at a first frequency

Φ_2 = phase angle at a second frequency;

wherein a value of FAILSAFE below zero indicates an abused sensor and a value of FAILSAFE above zero indicates a non-abused sensor.

19. (Canceled)

20. (Currently amended) ~~The method of claim 19,~~ A method of determining a failure condition indicating an abused sensor in a blood glucose concentration test, comprising the steps of:

a) applying a first test signal having an AC component to a test sample;

b) measuring a first phase angle response to the first test signal;

c) applying a second test signal having an AC component to the test sample;

d) measuring a second phase angle response to the second test signal; and

e) determining a failure condition value based upon the first phase angle response the second phase angle response and a predetermined Cottrell Failsafe Ratio,

wherein step (e) is performed based at least in part upon evaluating:

$$\arctan [CFR / (fs_0 + fs_1(\Phi_A - \Phi_B)]$$

where

CFR = Cottrell Failsafe Ratio

fs_0 = a constant

fs_1 = a constant

Φ_A = first phase angle response

Φ_B = second phase angle response.

21. (Canceled)